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10/585,401	02/12/2007	Henri-Louis Schwal	0559-1119	2537
<div>466 7590 07/13/2010</div> <div>YOUNG & THOMPSON 209 Madison Street Suite 500 Alexandria, VA 22314</div>				
<div>EXAMINER</div> <div>CERNOCH, STEVEN MICHAEL</div>				
<div>ART UNIT</div> <div>PAPER NUMBER</div> <div>3752</div>				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

DocketingDept@young-thompson.com

Office Action Summary

Application No.

10/585,401

Applicant(s)

SCHWAL ET AL.

Examiner

STEVEN M. CERNOCH

Art Unit

3752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 April 2010.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-22 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 22 July 2009 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/226)
4) ☐ Interview Summary (PTO-413)
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____
Paper No(s)/Mail Date _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-10, 13-19, 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lubsen et al. (US Pat No 4,382,552) in view of Abplanalp et al. (US Pat No 6,062,493).

Re claim 1 and 15, Lubsen et al. shows a nozzle (Fig. 1, 1) for spraying a liquid into the atmosphere, comprising: a secondary jet (Fig. 2, 5) connected to means (30) for supplying said liquid, said means including a reservoir (9) containing said liquid, and an orifice (13); and including means (24) for effecting a first fractionation of said liquid and an expansion chamber (27) in which the liquid that has been submitted to said first fractionation is introduced; a principal jet (3) connected to means for generating a gaseous flow (col. 2, lines 5-7), including means (42) for effecting a second fractionation of said liquid and an outlet orifice (Fig. 1, 4) to the atmosphere in which fluid which has been submitted to said second fractionation is introduced; and means (Fig. 2, 13) for connecting said secondary jet to said principal jet, connecting the expansion chamber (45) and the means (42) for effecting the second fractionation of said liquid, creating therefore a mixed gas-and-liquid fluid; and means (col. 1, lines 10-20) for checking and regulating the fluids in the apparatus.

Lubsen et al. does not teach gas under pressure but water under pressure.

However, Abplanalp et al. does teach gas under pressure col. 3, line 37).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have the motivation to modify the nozzle of Lubsen et al. with the gas under pressure of Abplanalp et al. because switching out one fluid for another is known in the art.

Re claim 2, Lubsen et al. shows that the secondary jet (Fig. 2, 5) is in the form of a cylinder, the central portion of said cylinder is occupied by the principal jet (3), which also has a cylindrical configuration, an annular cross-sectional space created thereby forming the expansion chamber (27).

Re claim 3, Lubsen et al. shows that the first and second fractionation means comprise a first and second venturi (Fig. 2, 24, 42) respectively.

Re claim 4, Lubsen et al. shows that the first venturi (Fig. 2, 24) comprises a tapering part (left of 26) followed by a calibrated cylindrical portion (26) terminating in the expansion chamber (27).

Re claim 5, Lubsen et al. shows that the tapering part (Fig. 2, left of 26) is in the form of a truncated cone, which is adapted to the calibrated cylindrical portion (26) through the intermediary of a bearing (23) so that the reduction in cross-section between the supply conduit (30) and the calibrated cylindrical portion (26) is discontinuous.

Re claim 6, Lubsen et al. shows that the calibrated cylindrical portion (Fig. 2, 26) terminates in the expansion chamber (27) in a recessed manner relative to a wall of said expansion chamber.

Re claim 7, Lubsen et al. shows that the second Venturi (Fig. 2, 42) includes a tapering part (left of 44) followed by a cylindrical portion (44) terminating in the atmosphere through the outlet orifice (Fig. 1, 4).

Re claim 8, Lubsen et al. shows that the means (Fig. 2, 13) for connecting the secondary jet (5) to the principal jet (3) comprise a plurality of conduits (47) disposed radially between the expansion chamber (45) and the cylindrical portion (44) of the second Venturi.

Re claim 9, Lubsen et al. shows that the expansion chamber (Fig. 2, 45) has sudden variations in thickness along the longitudinal axis.

Re claim 10, Lubsen et al. shows that the expansion chamber (Fig. 2, 45) has a smallest thickness in a vicinity of the plurality of conduits (47).

Re claim 13, Lubsen et al. shows that said first fractionation means (Fig. 2, 24) for said liquid comprise two first Venturi (24, 29) terminating in the expansion chamber (27).

Re claim 14, Lubsen et al. shows that said two first Venturi (Fig. 2, 24, 29) each comprise a tapering part (left of 26, forward of 29) followed by a calibrated cylindrical portion (25, 26), said calibrated cylindrical portion having a different diameter for each said two first Venturi.

Re claim 16, Lubsen et al. shows that the reservoir (Fig. 2, 9) is placed at a level such that the orifice (13) of said reservoir is lower than the spray nozzle (1).

Re claim 17, Lubsen et al. shows a method of spraying a liquid into the atmosphere, said method comprising steps of: effecting a first fractionation (Fig. 2, 24)

of said liquid by suction through a conduit (30), which has a first Venturi (24) terminating in an expansion chamber (27) which is subjected to a negative pressure; and effecting a second fractionation of the liquid from the first fractionation by suction through means (42) for connecting to the expansion chamber (45) to a second Venturi (42) which is supplied by a gas under pressure, wherein said liquid from said first fractionation (24) is mixed with the gas creating therefore a mixed gas-and-liquid and which terminates in a low pressure area (45) of an outlet orifice.

Lubsen et al. does not teach gas under pressure but water under pressure.

However, Abplanalp et al. does teach gas under pressure col. 3, line 37).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have the motivation to modify the nozzle of Lubsen et al. with the gas under pressure of Abplanalp et al. because switching out one fluid for another is known in the art.

Re claim 18, Lubsen et al. shows that the gas supply pressure of the second Venturi (Fig. 2, 42) is regulated (7) so that the pressure prevailing at the outlet (Fig. 1, 4) of said second Venturi is lower than the pressure prevailing in the expansion chamber (Fig. 2, 45).

Re claim 19, Lubsen et al. shows the claimed invention except that the pressure of the gaseous flow in the principal jet of said spray nozzle is between 2.5 bars and 3.5 bars, and the diameter of the calibrated cylindrical portion of the first venturi is between 0.3 mm and 1 mm, permitting the delivery of liquid 15 ml/min and 40 ml/min. It would have been obvious to one of ordinary skill in the art at the time the invention was made

to use said pressure and said diameter, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Re claim 21, Lubsen et al. does not show that it's for disinfecting premises used for medical, paramedical or food-processing purposes. However, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the structural limitations. Ex parte Masham, 2 USPQ2d 1647 (1987).

Re claim 22, Lubsen et al. shows that the means (Fig. 2, 13) for connecting the secondary jet (5) to the principal jet (3) comprises one conduit (47) disposed between the expansion chamber (45) and the cylindrical portion (44) of the second Venturi.

Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lubsen et al. (US Pat No 4,382,552) in view of Abplanalp et al. (US Pat No 6,062,493) as applied to claims 1-10, 13-19, 21 and 22 above, and further in view of Wanson et al. (FR 2,487,782).

Re claim 11, Lubsen et al. does not show that it additionally comprises means for affecting a third fractionation of said liquid.

However, Wanson et al. does teach a third fractionation of said liquid (Fig. 1, 7).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have the motivation to modify the nozzle of Lubsen et al. with the third fractionation of Wanson et al. as use of fractionation is known in the art.

Re claim 12, Lubsen et al. does not show that said third fractionation means comprise an ultrasonic resonator and a resonance chamber connected to the outlet orifice in the axis of the principal jet.

However, Wanson et al. does teach that said third fractionation means comprise an ultrasonic resonator (Fig. 1, 5) and a resonance chamber (11) connected to the outlet orifice in the axis of the principal jet.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have the motivation to modify the nozzle of Lubsen et al. with the chamber of Wanson et al. since ultrasonic resonance is known in the art.

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lubsen et al. (US Pat No 4,382,552) in view of Abplanalp et al. (US Pat No 6,062,493) as applied to claims 1-10, 13-19, 21 and 22 above, and further in view of Wanson et al. (FR 2,487,782).

Re claim 20, Lubsen et al. does not show that it additionally comprises means for affecting a third fractionation of said liquid.

However, Wanson et al. does teach a third fractionation of said liquid (Fig. 1, 7).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have the motivation to modify the nozzle of Lubsen et al. with the third fractionation of Wanson et al. as use of fractionation is known in the art.

Response to Arguments

Applicant's arguments filed 4/19/2010 have been fully considered but they are not persuasive. Regarding applicant's arguments, firstly, Abplanalp et al. teaches gas

under pressure and as MPEP section 2115 states "Expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim." Ex parte Thibault, 164 USPQ 666, 667 (Bd. App. 1969). Furthermore, "[i]nclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims." In re Young, 75 F.2d 996, 25 USPQ 69 (CCPA 1935) (as restated in In re Otto, 312 F.2d 937, 136 USPQ 458, 459 (CCPA 1963)).

Regarding the further arguments of the Lubsen et al. reference, what applicant has referred to as a "fractionation" is something the examiner has looked into as best as possible and the only conclusion the examiner can draw up is that without a positive definition from the applicant's specification, the term "fractionation" that's being used throughout is only referring to the affect a throttle has on a fluid as "venturi's" 1 and 1' from figure 2 aren't actually "venturi's" as there appears to be no force of air or fluid flowing past to create the pressure needed to draw out the liquid from the source tubes 203 and 204. As the understood definition of fractionation states, it is a method to divide up a quantity of a mixture into a number of smaller fractions as fractionation makes it possible to isolate more than two components of a mixture in a single run. In the current application this appears not to be the case as the separate components of the mixture are what is being "fractionated" meaning the liquid flowing from source tubes 203 and 204 is just one component of a greater mixture that happens downstream of where their supposed "fractionation" occurs at "venturi's" 1 and 1'. Venturi 7 in figure two appears to be a true venturi as it draws said liquid through

connection tubes 5 and 12 into the gas running through tube 101. Again though, this is referred to as a "fractionation" which just isn't the case as there is no dividing going on, and in fact, quite the opposite, as said before a mixture is occurring so as to atomize the liquid and then spray it into the atmosphere through outlet 4. Having explained the current position of the examiner on the inner workings of the current device, the rejection utilizing Lubsen et al. shall be maintained as it is believed the claimed limitations of effecting a first and a second "fractionation" of the liquid is occurring through the venturi's 24 and 42 in figure 2 of Lubsen as well as a mixture being distributed to the atmosphere. If there are any questions regarding the examiner's position, please feel free to contact him at the phone number listed below, as the examiner believes an interview may help to clear up some discrepancies and be a positive step in prosecution.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEVEN M. CERNOCH whose telephone number is (571)270-3540. The examiner can normally be reached on IFP.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Len Tran can be reached on (571)272-1184. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/S. M. C./
Examiner, Art Unit 3752
7/2/2010
/Len Tran/
Supervisory Patent Examiner, Art Unit 3752